

ORDER OF THE STATE OF WISCONSIN
NATURAL RESOURCES BOARD
RENUMBERING, RENUMBERING AND AMENDING,
AMENDING AND CREATING RULES

The Wisconsin Natural Resources Board proposes an order to **renumber** NR 446.02(1), 446.03(2) and (3), 446.04 and 446.05; to **renumber and amend** NR 446.03 (intro.) and (1); to **amend** NR 400.02(64), 405.01(2) Note, 405.02(22)(c), 406.04 (intro.), 408.02(2)(a) and (4), 408.04(1), 439.075(2)(b)1., 445.01(1)(a), 446.01(2) and Note, 484.04(13) and (21) and 484.05(9); and to **create** NR 446 Subchapter I (title) preceding s. NR 446.01, 446.02(1), (1d), (1p), (1t), (6e), (6m), (6s), (8m) and (10s), 446 Subchapter II, 446 Subchapter III (title) preceding s. NR 446.14, 446.14 (title) and (intro.), 484.05(10) to (13) and 484.10(47m), (52m) and (55m), relating to the control of mercury emissions to address the atmospheric deposition of mercury.

AM-27-01

Analysis Prepared by the Department of Natural Resources

Authorizing Statutes: ss. 227.11(2)(a) and 285.11(9), Stats.

Statutes interpreted: s. 285.11(9), Stats.

The proposed order will establish requirements that would reduce mercury emissions from major electric utilities, set mercury emission ceilings for other large stationary sources, and require mercury emissions offsets for new or modified stationary sources of mercury emissions. The goal of these actions is to reduce the atmospheric mercury deposition to Wisconsin's environment and ultimately achieve a lowering of mercury concentrations in fish and wildlife.

The order includes a provision for major electric utilities and large stationary sources to calculate their annual mercury emissions based on procedures in the rule. An annual ceiling on mercury emissions will be based on that calculation. The major utilities will be required to reduce mercury emissions in three phases over a fifteen year period. The rule also requires new sources of mercury emissions to be offset by mercury emission reductions from existing sources. In addition to the use of control techniques, the rule will allow the use of emission reduction credits to maintain an annual emissions ceiling, provide emission offsets or to meet the electric utility mercury emission reduction requirements.

The consent of the Attorney General and the Revisor of Statutes will be requested for the incorporation by reference of a number of new test methods in ch. NR 484.

SECTION 1. NR 400.02(64) is amended to read:

NR 400.02 (64) "Federally enforceable" means all limitations and conditions which are enforceable by the administrator, including those requirements developed pursuant to ~~chs.~~ ch. NR 440, subch. III of ch. NR 446 and ~~446~~ chs. NR 447 to 449, and under sections 111 and 112 of the act (42 USC 7411 and 7412), requirements within any applicable state implementation plan, any permit requirements established pursuant to ch. NR 405, requirements in construction permits issued under ch. NR 406 or 408

and requirements in operation permits issued pursuant to ch. NR 407 and title V of the act which are designated as federally enforceable.

SECTION 2. NR 405.01(2) Note is amended to read:

NR 405.01(2) Note: Throughout the proposed rule, changes have been made which result in the provisions of this PSD rule differing from 40 CFR 51.166, the federal regulation on which it is based. In this rule, the term "air contaminant" is substituted for the term "pollutant" in the federal regulation and "department" for "the State", "the Governor" and "reviewing authority". The federal definition for "building, structure, facility or installation" is applied to the phrase "facility, building, structure, equipment, vehicle or action" □□ a similar term which appears in Wisconsin's statutory provisions on air pollution. In addition, cross references in the federal regulation have been changed in the rule to comparable provisions in Wisconsin's rule (e.g., "40 CFR Parts 60 and 61" has been changed to "~~chs. ch.~~ NR 440, subch. III of ch. NR 446 and 446 chs. NR 447 to 449"). Eliminated from the rule are provisions of the federal regulations which do not apply to the state's PSD program (i.e., provisions governing EPA approval of plan revisions).

SECTION 3. NR 405.02(22)(c) is amended to read:

NR 405.02(22)(c) Volatile organic compounds exclude the compounds listed under s. NR 400.02(162) unless the compound is subject to an emission limitation under ch. NR 440, subch. III of ch. NR 446 or chs. NR 446 447 to 449.

SECTION 4. NR 406.04 (intro.) is amended to read:

NR 406.04 Direct sources exempt from construction permit requirements. This section does not provide an exemption from construction permit requirements for a source that is required to obtain a permit under ch. NR 405 or 408 or s. NR 446.05. For any direct source not required to obtain a permit under ch. NR 405 or 408 or s. NR 446.05, no construction permit is required prior to commencing construction, reconstruction, replacement, relocation or modification if the following conditions are met:

SECTION 5. NR 408.02(2)(a) and (4) are amended to read:

NR 408.02(2)(a) Any applicable standards in ~~chs. ch.~~ NR 440, subch. III of ch. NR 446 and 446 chs. NR 447 to 449.

(4) "Best available control technology" or "BACT" means an emissions limitation, including a visible emissions standard, based on the maximum degree of reduction for each air contaminant subject to regulation under the act (42 USC 7401 to 7671q) which would be emitted from any proposed major source or major modification which the department, on a case-by-case basis, taking into account energy, environmental and economic impacts and other costs, determines is achievable for such source or modification through application of production processes or available methods, systems and techniques, including clean fuels, fuel cleaning or treatment or innovative fuel combination techniques for control of the air contaminant. In no event may application of best available control technology result in emissions of any air contaminant which would exceed the emissions allowed by any applicable standard under ~~chs.~~ ch. NR 440, subch. III of ch. NR 446 and 446 chs. NR 447 to 449. Emissions from any source utilizing clean fuels or any other means to comply with this subsection may not be allowed to increase above the levels that would have been required prior to enactment of the 1990 clean air act amendments on November 15, 1990. If the department determines that technological or economic limitations on the application of measurement methodology to a particular emissions unit would make the imposition of an emissions standard infeasible, a design, equipment, work practice, operational standard or combination thereof, may be prescribed instead to satisfy the requirement for the application of best available control technology. The standard shall, to the degree possible, set forth the emissions reduction achievable by implementation of a design, equipment, work practice or operation, and shall provide for compliance by means which achieve equivalent results.

SECTION 6. NR 408.04(1) is amended to read:

NR 408.04(1) A major source or major modification shall meet each applicable emission limitation under this chapter and each applicable emission standard or standard of performance under ~~chs.~~ ch. NR 440, subch. III of ch. NR 446 and 446 chs. NR 447 to 449.

SECTION 7. NR 439.075(2)(b)1. is amended to read:

NR 439.075(2)(b)1. Compliance emission testing for mercury is required for an emission point

identified in s. NR 446.04(1), ~~(2) or (3)~~, 446.11(3) or 446.15(1), (2) or (3).

SECTION 8. NR 445.01(1)(a) is amended to read:

NR 445.01(1)(a) This chapter applies to all air contaminant sources which may emit hazardous pollutants and to their owners and operators. The emission limitations and control requirements of this chapter do not apply to a source of a hazardous air contaminant regulated under subch. III of ch. NR 446 or chs. NR 446 447 to 449 for the specific hazardous air contaminants regulated under those chapters or to a source which must meet a national emission standard for a hazardous air pollutant promulgated under section 112 of the act (42 USC 7412) for the specific air pollutant regulated under that standard.

SECTION 9. NR 446 Subchapter I (title) preceding s. NR 446.01 is created to read:

NR 446 (title) **Subchapter I - General Provisions.**

SECTION 10. NR 446.01(2) and Note are amended to read:

NR 446.01(2) PURPOSE. This chapter is adopted under ss. 285.11, 285.13, 285.17 and 285.27, Stats., to establish emission limitations, stack sampling procedures and emission monitoring requirements for mercury emissions from air contaminant sources in order to protect air quality and reduce atmospheric mercury deposition.

Note: ~~Except for s. NR 446.03(1), this~~ Subchapter III of this chapter is based on the federal regulations contained in 40 CFR part 61, Subpart E.

SECTION 11. NR 446.02(1) is renumbered 446.02(1h).

SECTION 12. NR 446.02(1), (1d), (1p), (1t), (6e), (6m), (6s), (8m) and (10s) are created to read:

NR 446.02(1) “Allowable emissions” means the annual mercury emissions of a stationary source, calculated by using the maximum rated capacity of the source, and by accounting for enforceable limits which restrict the operating rate or hours of operation or both.

(1d) “Baseline mercury emissions” means the annual mercury emissions from a major utility or major stationary source as determined under s. NR 446.04.

(1p) “Certified emission reduction” means a reduction of mercury emissions that has been certified by the department and made enforceable through a construction permit, operation permit or other appropriate means.

(1t) “Commission” means the public service commission.

(6e) “Major stationary source” means a stationary source whose mercury emissions are 10 pounds per year or greater.

(6m) “Major utility” means a Class A utility, as defined under s. 199.03(4), Stats., which generates electricity or an electrical cooperative association organized under ch. 185, Stats., whose mercury emissions from all stationary sources under the common ownership and control of the utility or the association are 100 pounds per year or greater.

(6s) “Mercury” has the meaning given in s. NR 445.02 (9).

(8m) “Mercury-containing products reduction project” means a program that is designed to collect, store and dispose of mercury containing products in a manner that will prevent or minimize future release of mercury into the environment.

(10s) “Pollution reduction project” means any activity or project which reduces mercury emissions. A pollution reduction project may include:

- (a) The installation or modification of a pollution control system.
- (b) Material or product reformulation.
- (c) The replacement of a process or product with another process or product which emits less mercury.
- (d) The elimination or modification of a step in a process.
- (e) An operational, maintenance or management practice.
- (f) The reduction or elimination of fugitive emissions.
- (g) Any other project approved by the department.

SECTION 13. NR 446.03 (intro.) and (1) are renumbered 446.025 and, as renumbered, 446.025 (title), (intro.) and (1) are amended to read:

NR 446.025 (title) Mercury ~~emission limits~~ ambient concentration limit. No person may cause, allow or permit emissions of mercury:

~~(1) In~~ in such quantity and duration as to cause the ambient air concentration to exceed $1\ \mu\text{g}/\text{m}^3$, averaged over a 30-day period.

SECTION 14. NR 446.03(2) and (3) are renumbered 446.14(1) and (2).

SECTION 15. NR 446.04 and 446.05 are renumbered 446.15 and 446.16.

SECTION 16. NR 446 Subchapter II is created to read:

NR 446 (title) **Subchapter II - Control of the Atmospheric Deposition of Mercury.**

NR 446.03 Baseline mercury emissions. (1) PREVIOUSLY EXISTING STATIONARY SOURCES. (a) The department shall determine the baseline mercury emissions of any stationary source that had actual emissions of mercury that were 10 pounds or more in every calendar year from 1998 to 2000.

(b) By 24 months after the effective date of this subchapter...[revisor inserts date], the owner or operator of a stationary source of mercury described in par. (a) shall submit a report to the department that includes information to calculate the annual mercury emissions for 1998, 1999 and 2000 using the procedures in s. NR 446.04.

(c) After reviewing the report provided in par. (b), the department shall determine the baseline mercury emissions for each stationary source of mercury emissions. The baseline mercury emission shall be the average of the annual emissions for 1998, 1999 and 2000, unless the department approves an alternative baseline.

(d) In the report required under par. (b), an owner or operator may request that the department determine an alternative baseline if the 3 years are not representative of the source's normal operations. This request shall include information that demonstrates to the department's satisfaction that an

alternative baseline is appropriate, a proposed alternative baseline and information that documents how that proposed alternative baseline was determined.

(e) By 36 months after the effective date of this subchapter...[revisor inserts date], the department shall provide written notification to each owner or operator who submitted a report under par. (b) of the department's determination of the baseline mercury emissions for the stationary sources of the owner or operator.

(f) Beginning with the calendar year following written notification by the department under par. (e), no owner or operator of a stationary source described in par. (a) may allow, cause or permit mercury emissions which exceed on an annual basis the stationary source's baseline mercury emissions.

(2) NEWLY AFFECTED STATIONARY SOURCES. (a) The department shall determine the baseline mercury emissions of a stationary source of mercury which is not subject to sub. (1), but which has actual mercury emissions of 10 pounds or more each year for any 3 consecutive years after 1998.

(b) 1. The owner or operator of a stationary source of mercury described in par. (a) shall provide written notification in a report to the department by March 1 of the year after the third consecutive year that annual mercury emissions from the stationary source were 10 pounds or more.

2. The owner or operator shall include with this notification a report of annual mercury emissions for each year of the consecutive 3-year period in par. (a) using the procedures in s. NR 446.04.

3. After reviewing the report provided under subd. 2., the department shall determine the baseline mercury emissions for the source. The baseline mercury emissions shall be the average of the annual emissions for the consecutive 3-year period, unless the department approves an alternative baseline.

4. In the notification provided under subd. 1., an owner or operator may request that the department determine an alternative baseline if the 3 consecutive years are not representative of the source's normal operations. This request shall include information that demonstrates to the department's satisfaction that an alternative baseline is appropriate, a proposed alternative baseline and information that documents how that proposed alternative baseline was determined.

5. By December 31 of the year that notification is given under subd. 1., the department shall provide written notification to each owner or operator who submitted a notification under subd. 1. of the department's determination of the baseline mercury emissions for the stationary sources of the owner or operator.

6. Beginning with the calendar year following written notification by the department under subd. 5., no owner or operator of a major stationary source may allow, cause or permit mercury emissions which exceed on an annual basis the stationary source's baseline mercury emissions.

7. Notwithstanding subd. 6., if the owner or operator of a stationary source fails to provide the department notification under the requirements of subd. 1., the baseline mercury emissions of the stationary source shall be the average of the annual emissions for the consecutive 3-year period that an owner or operator was required to provide the notification and report under subd. 2. Beginning 2 years after the source emitted mercury emissions of 10 pounds or more for 3 consecutive years, the owner or operator of a stationary source may not allow, cause or permit mercury emissions to exceed on an annual basis the stationary source's baseline mercury emissions.

NR 446.04 Procedures for determining baseline mercury emissions. The owner or operator of a mercury emissions unit subject to s. NR 446.03 shall calculate baseline mercury emissions using the following procedures and methods:

(1) MAJOR UTILITY COMBUSTION UNIT. (a) The owner or operator of a combustion unit at a major utility shall calculate baseline mercury emissions using the procedures of this subsection for each emissions unit and provide all associated data to the department.

(b) The owner or operator shall calculate and report to the department the mass mercury content of each fuel used in the emissions unit during the baseline years in the following manner:

1. The owner or operator shall provide the annual consumption for each fuel used.
2. The owner or operator shall provide the characteristics for each fuel including mercury content in ppm, chlorine content in ppm, percent sulfur, ash content and heat content. These characteristics shall be determined based on the most representative data available for each fuel using one of the following:

- a. A past analysis conducted during the baseline years of fuel characteristics for that fuel.
 - b. A current analysis of a fuel determined to be representative of a specific fuel used during the baseline years.
3. The owner or operator shall calculate the mass mercury content, expressed in pounds, by multiplying the mercury content by the annual consumption for each fuel.
4. All data used in determining fuel characteristics shall meet the following standards for fuel sampling and analysis or other standards and methods approved by the department:
 - a. Solid and liquid fuel sampling and preparation shall use the procedures and methods listed in s. NR 439.08 or 439.085.
 - b. Solid fuel analysis shall use the following procedures and methods: for mercury, those outlined in ASTM D3684-94 (2000), incorporated by reference in s. NR 484.10(47m); for chlorine, those outlined in ASTM D4208-88 (1997), incorporated by reference in s. NR 484.10(52m); and for sulfur, ash and heat content, those listed in s. NR 439.08.
 - c. Liquid fuels analysis shall use the following procedures and methods: for mercury, those outlined in EPA Method 7471B, incorporated by reference in s. NR 484.05 (12), EPA Method 7473, incorporated by reference in s. NR 484.05 (13), or EPA Method 1631, incorporated by reference in s. NR 484.05(10); for chlorine, those outlined in ASTM D4208-88 (1997) , incorporated by reference in s. NR 484.10(52m); and for sulfur, ash and heat content those listed in s. NR 439.08.
- (c) The owner or operator shall calculate the removal of mercury by air pollution control equipment for each fuel in the following manner:
 1. The owner or operator shall conduct a performance test of the mercury removal efficiency of air pollution control equipment according to methods and procedures specified under ss. NR 439.07 and 446.15 for emission testing. The performance test shall determine the following parameters:
 - a. Fuel characteristics, using methods specified under par. (b) 4.
 - b. Mercury content of each combustion by-product, using random sampling procedures specified by EPA SW-846, Chapter 9, incorporated by reference in s. NR 484.05(11), and conducting analysis for mercury using ASTM D6414-99, incorporated by reference in s. NR 484.10(55m).

c. The flue gas total mercury emission concentration, flow rate and temperature using methods specified under s. NR 439.07.

2. The owner or operator shall also provide, as available, data listed in subd. 1. for the baseline years.

3. The owner or operator shall use the performance test results to calculate the current year and baseline period removal efficiency of the air pollution control equipment.

(d) The owner or operator shall determine the annual mercury emissions by subtracting the mercury mass removed by air pollution control equipment from the mercury mass in the fuel.

(2) STATIONARY SOURCE COMBUSTION UNIT. (a) The owner or operator of a stationary source combustion unit which is not subject to sub. (1) shall calculate baseline mercury emissions using the procedures of this subsection for each emissions unit and shall provide all associated data to the department.

(b) The owner or operator shall calculate and report to the department the mass mercury content of each fuel used in the emissions unit during the baseline years according to the procedures specified in sub. (1)(b).

(c) The owner or operator shall calculate the removal of mercury by air pollution control equipment for each fuel used in one of the following ways:

1. The owner or operator may use the following parameters, which meet the methods and procedures specified under sub. (1)(b)4., and their correlation to mercury emissions based on existing emission test data:

a. Fuel characteristics as specified by par. (b).

b. The type of air pollution control equipment and particulate control efficiency of the equipment.

c. The flue gas temperature and flow rate.

2. The owner or operator may elect to use the procedure in sub. (1) (c) to calculate the removal efficiency of mercury by air pollution control equipment.

(d) The owner or operator shall determine the annual mercury emissions by subtracting the mercury mass removed by air pollution control equipment from the mercury mass in the fuel.

(3) STATIONARY SOURCE PROCESS UNIT. The owner or operator of a process unit that emits mercury and is subject to s. NR 446.03 shall calculate and report baseline mercury emissions using the procedures and methods of this subsection and shall provide all associated data to the department. The calculations shall use, singly or in combination, a mass balance approach or emission test data as follows:

(a) A separate mass balance for each baseline year shall be used to calculate the mercury contained in each applicable process stream by accounting for:

1. All process streams including: process raw materials, products and by-products; and pollution control equipment and control by-products.
2. The mercury concentration and throughput rate for each process stream.
3. The annual mercury mass content input and output of each process stream.

(b) Any needed sampling and analysis of input or output process streams for mercury content shall use EPA Method 7471B, incorporated by reference in s. NR 484.05(12), EPA Method 7473, incorporated by reference in s. NR 484.05 (13), or EPA method 1631, incorporated by reference in s. NR 484.05(10), or methods approved by the department.

(c) Mercury emission test data and emission factors determined for any applicable process stream may also be used.

NR 446.05 Mercury emission offsets. (1) Beginning January 1 of the calendar year 4 years after the effective date of this subchapter...[revisor inserts date], no person may commence construction or modification of a stationary source that results in an increase in annual allowable emissions of mercury of 10 pounds or more from the new or modified source unless the person has obtained a permit under ch. NR 406.

(2) The permit under ch. NR 406 may not be issued unless, prior to the initial operation of the new or modified source, the total annual pounds of allowable mercury emissions from the proposed new or modified source are offset by an equal or greater reduction in actual emissions of mercury at a ratio of 1.5 to 1.0.

(3) Actual mercury emission reductions may be obtained from the same or other stationary sources or by securing certified emission reductions or a combination of these methods to meet the offset requirement.

NR 446.06 Mercury reduction requirements for major utilities. (1) By January 1 of the calendar year commencing 5 years after the effective date of this subchapter...[revisor inserts date], no owner or operator of a major utility may cause, allow or permit mercury emissions from stationary sources of the major utility on an annual basis in an amount which exceeds 70% of the baseline mercury emissions determined by the department under s. NR 446.03.

(2) By January 1 of the calendar year commencing 10 years after the effective date of this subchapter...[revisor inserts date], no owner or operator of a major utility may cause, allow or permit mercury emissions from stationary sources of the major utility on an annual basis in an amount which exceeds 50% of the baseline mercury emissions determined by the department under s. NR 446.03.

(3) By January 1 of the calendar year commencing 15 years after the effective date of this subchapter...[revisor inserts date], no owner or operator of a major utility may cause, allow or permit mercury emissions from stationary sources of the major utility on an annual basis in an amount which exceeds 10% of the baseline mercury emissions determined by the department under s. NR 446.03.

NR 446.07 Mercury-containing products reduction projects. (1) The department shall encourage persons to develop and undertake mercury-containing products reduction projects. The department may certify actual mercury emission reductions which occur from mercury-containing products reduction projects upon application for certification. An application for certification of mercury emission reductions shall be submitted to the department by the project sponsor in a format that contains, at a minimum, the following information:

- (a) A description of the mercury-containing product reduction project.
- (b) The estimated duration of the project in years.
- (c) The parties involved in the proposed project and their responsibilities.

(d) An estimate of the amount of mercury release to the ambient air that will be avoided during the life of the proposed project and annually for each year of the project.

(e) The methodology that will be used to determine the amount of collected mercury and avoided releases to the ambient air.

(f) The methods that will be used to handle, store or dispose of mercury collected in the proposed project.

(g) Other relevant information as required by the department.

(2) The department may only certify mercury emission reductions from projects that propose the collection of 50 pounds of mercury or more annually from sources in Wisconsin.

(3) The department may only certify mercury emission reductions from mercury-containing products reduction projects that begin after the effective date of this subchapter ...[revisor inserts date].

(4) The department may not accept applications for certification of mercury emission reductions under this section until 3 years after the effective date of this subchapter...[revisor inserts date].

(5) The department shall respond in writing to an application for certification of mercury emission reductions under this section within 90 days of receiving an application that includes all relevant information.

(6) To request certification of mercury emission reductions, the sponsor of a mercury-containing products reduction project shall provide the department with a written report that contains the following information covering project operation for the previous calendar year:

(a) The amount in pounds of mercury collected in the project and a description of the geographic area where products were collected.

(b) The calculated amount of mercury release avoided in pounds.

(c) The fate of mercury collected.

(7) For purposes of calculating and certifying the amount of mercury emission reductions resulting from a mercury-containing products reduction project, the department may not certify any mercury emission reductions from the project that are required by any federal, state or local requirements that are in effect on the date of certification.

(8) The department shall update the certified emission reduction registry required in s. NR 446.09 within 30 days after a certification is made under this section.

NR 446.08 Pollution reduction projects. (1) The department may certify mercury emission reductions from a pollution reduction project. Any person seeking certification shall submit an application to the department containing, at a minimum, the following information:

(a) A description of the pollution reduction project and amount of mercury emission reductions for which certification is sought.

(b) Information that will allow the department to determine that the mercury emission reductions are surplus, permanent, quantifiable and enforceable.

(c) Other relevant information as required by the department.

(2) Emission reductions achieved by shutting down an existing source or permanently curtailing production or operating hours may generally be certified if the source notifies the department in writing prior to the date the shutdown or curtailment occurs. The notification shall include documentation of the quantity of emission reductions to be certified.

(3) The department may only certify mercury emission reductions from pollution reduction projects that result in 5.0 pounds or more annually of mercury emission reductions.

(4) The department may only certify mercury emission reductions from pollution reduction projects that begin after the effective date of this subchapter...[revisor inserts date].

(5) The department may not accept applications for certification of mercury emission reductions under this section until 3 years after the effective date of this subchapter...[revisor inserts date].

(6) For purposes of calculating and certifying the amount of mercury emission reductions resulting from a pollution reduction project, the department may not certify any mercury emission reductions from the project that are required by any federal, state or local requirements that are in effect on the date of certification.

(7) The department shall respond in writing to an application for certification of mercury emission reductions under this section within 90 days of receiving an application that includes all relevant information.

(8) The department shall update the certified emission reduction registry required in s. NR 446.09 within 30 days after a certification is made under this section.

NR 446.09 Registry of certified emission reductions. (1) The department shall maintain a registry of certified mercury emission reductions. The registry shall be established by 3 years after the effective date of this subchapter...[revisor inserts date].

(2) Certified emission reductions may be used as offsets to meet the requirements of s. NR 446.05, to meet a baseline emission requirement of s. NR 446.03(1)(f) or (2)(b) 6. or 7. or to meet a phased emission reduction requirement of s. NR 446.06.

(3) The department shall update the registry to reduce any certified mercury emission reductions previously certified that would now be required due to a local, state or federal regulation which is in effect. The registry shall contain, at a minimum, the following information:

- (a) The name and address of the entity that achieved the emission reductions.
- (b) The date the emission reductions were certified by the department and the amount, in pounds per year, of certified emission reductions.
- (c) A description of the pollution reduction project or mercury-containing products reduction project that created the certified emission reductions.
- (d) The holder of the certified emission reductions.
- (e) The availability of certified emission reductions to meet the provisions of this subchapter.

(4) The department shall provide written notice to all interested persons of any changes made to the registry.

NR 446.10 Compliance alternatives and reporting requirements. (1) MAJOR UTILITIES. (a) The owner or operator of a major utility subject to the baseline mercury emissions requirements in s. NR

446.03 or the mercury reduction requirements in s. NR 446.06 may comply with the requirements by reducing or controlling mercury emissions at the utility's sources or by obtaining a sufficient amount of certified mercury emission reductions or by a combination of these compliance alternatives.

(b) The owner or operator of a major utility shall include mercury emissions from all stationary sources in the state under the ownership or control of the major utility in the calculation of compliance with the requirements of this subchapter.

(c) A major utility may use certified emission reductions from a mercury-containing products reduction project to provide no more than 25% of the reductions required under s. NR 446.06.

(d) A major utility may use certified emission reductions from a pollution reduction project performed by another person to provide no more than 25% of the reductions required under s. NR 446.06.

(e) By March 1st the owner or operator of a major utility shall notify the department in writing if the major utility has exceeded a baseline mercury emissions or mercury reduction requirement in this subchapter in the previous calendar year. The owner or operator of a major utility shall secure sufficient additional certified emission reductions to achieve compliance with the previous year's requirement by the following August 1st. The owner or operator of the major utility shall report final compliance for the previous calendar year in the plan required under par. (f).

(f) Beginning in the calendar year after the department determines a major utility's baseline mercury emissions, and annually thereafter, the owner or operator of a major utility shall provide a compliance plan to the department by October 1st that includes:

1. The major utility's expected electricity demand for the following year.
2. The major utility's annual operation plan.
3. The expected operation characteristics of each boiler, including:
 - a. The order to be used in placing the boilers into operational production.
 - b. The planned maintenance schedule for each boiler and how the maintenance is expected to affect the methods of meeting electricity demands.
4. The amount and mercury content of coal, other fossil fuel or other materials to be combusted in each boiler in operational production.

5. The anticipated mercury emissions from each boiler.
 6. Contingency plans for unexpected events or increased demand for electricity including a summary of generation costs and the anticipated additional costs for reducing mercury emissions under those circumstances.
 7. The methods that will be used to achieve compliance with this subchapter in the following year.
 8. The total anticipated annual mercury emissions from all stationary sources in the state under the ownership or control of the major utility for each of the next 3 years.
 9. If applicable, plans for the use of certified emission reductions to comply with the requirements of this subchapter.
 10. If applicable, the final compliance status for the previous calendar year with a requirement for which a written notice was provided under par. (e).
- (2) MAJOR STATIONARY SOURCES. (a) Except as provided in sub. (1) or par. (b) or (c), the owner or operator of a major stationary source shall demonstrate compliance with the applicable baseline mercury emissions requirements in s. NR 446.03 through the emission inventory report required under ch. NR 438.
- (b) If the owner or operator of a major stationary source is achieving compliance with the baseline mercury emissions requirements in s. NR 446.03 through the use of certified emission reductions, the owner or operator shall submit a compliance status report for the previous calendar year to the department by March 1st.
- (c) The owner or operator of a major stationary source that has exceeded its baseline mercury emissions requirement in the previous calendar year shall notify the department by March 1st. The owner or operator shall secure sufficient additional certified emission reductions to achieve compliance with the previous year's baseline mercury emission requirement no later than August 1st.
- (d) The owner or operator of a major stationary source who was required to provide notice under par. (c) shall report final compliance with the previous year's baseline mercury emission requirement to the department by October 1st.

NR 446.11 Annual mercury emissions determination. The owner or operator of a mercury emissions unit subject to the requirements of s. NR 446.03 or 446.06 shall determine and report annual actual mercury emissions for each emissions unit using the following methods and procedures:

(1) COMBUSTION EMISSIONS UNIT. Unless the department approves an alternative method under sub. (3), the owner or operator of a combustion mercury emissions unit subject to s. NR 446.03 or 446.06 shall use the following methods and procedures to determine annual actual mercury emissions:

(a) *Major utility combustion unit.* The owner or operator of a combustion unit at a major utility shall determine and report the annual mercury emissions using a mass balance of mercury contained in all fuels used and by-products produced in the following manner:

1. The total annual emissions shall be calculated by aggregating the mercury emission mass balance data calculated for each month of operation as follows:

a. The fuel mercury mass content shall be calculated for each month of operation by multiplying the monthly average concentration by the monthly amount for each fuel used during that period.

b. The mercury mass content of each by-product shall be calculated for each month of operation by multiplying the average mercury concentration by the amount of each by-product collected during that period.

2. The mercury mass content of each fuel shall be determined using the following sampling and analysis procedures:

a. Coal fuel samples shall at a minimum be collected weekly using methods listed in s. NR 439.085(2) or a method approved by the department which results in data at least as reliable as the listed methods. The weekly samples shall be aggregated into a monthly composite sample for each fuel and analyzed for total mercury using ASTM method D3684-94 (2000), incorporated by reference in s. NR 484.10(47m).

b. Liquid fossil fuel samples shall at a minimum be collected monthly or at the time each fuel shipment is received, whichever is less frequent, for each fuel following methods listed in s. NR 439.08(2). Each sample shall be analyzed for total mercury using EPA Method 7473, incorporated by

reference in s.NR 484.05 (13), or EPA method 1631, incorporated by reference in s. NR 484.05(10).

c. Fuels other than coal or liquid fossil fuels shall be sampled using methods listed in s. NR 439.08(3). The samples shall be analyzed for total mercury using EPA Method 7473, incorporated by reference in s.NR 484.05 (13), or EPA method 1631, incorporated by reference in s. NR 484.05(10).

d. The total monthly quantity of each fuel used shall be determined using 40 CFR part 60 Appendix B methods, incorporated by reference in s. NR 484.04(21), or by a method approved by the department.

3. The mercury mass content of each by-product shall be determined using the following sampling and analysis procedures:

a. A representative sample shall be collected weekly for each combustion by-product and aggregated into a monthly composite sample. The weekly representative sample shall be composed of the number and placement of samples determined to yield a 95% confidence level for random sampling according to the methods of EPA SW-846, Chapter 9, incorporated by reference in s. NR 484.05(11).

b. The monthly composite sample of each by-product collected shall be analyzed for mercury using ASTM method D6414-99, incorporated by reference in s. NR 484.05(55m).

c. The amount of each by-product collected shall be determined each month using methods approved by the department.

d. If use of a different fuel is initiated, this shall constitute a new by-product stream requiring the collection of a new composite sample.

4. The owner or operator shall submit an annual report which includes the following for each mercury emissions unit:

a. The monthly consumption, mercury concentration, and mass mercury content for each fuel; the total monthly mass mercury content for all fuels consumed; and the total annual mass mercury content for all fuels consumed.

b. The monthly quantity collected, mercury concentration, and mass mercury content for each by-product; the total monthly mass mercury content for all by-products; and the total annual mass mercury content for all by-products.

c. The monthly and annual aggregate mercury mass emissions expressed in pounds.

5. The recordkeeping requirements of s. NR 439.04(1) and (2) apply to the data collected for the annual reports required under subd. 4.

(b) *Stationary source combustion unit.* The owner or operator of a stationary source combustion unit which is not subject to par. (a) shall determine and report the annual mercury emissions using a mass balance of mercury contained in all fuels used and by-products produced in the following manner:

1. The total annual emissions shall be calculated by aggregating the mercury emission mass balance data calculated for each quarter of operation as follows:

a. The mercury mass content for each fuel shall be calculated for each quarter of operation by multiplying the quarterly average concentration by the quarterly consumption for each fuel during that period.

b. The mercury mass content of each by-product shall be calculated for each quarter of operation by multiplying the average mercury concentration by the amount of each by-product collected during that period.

2. The mercury mass content of each fuel shall be determined using the following sampling and analysis procedures:

a. Coal fuel samples shall at a minimum be collected monthly using methods listed in s. NR 439.085(2), or a method approved by the department which results in data at least as reliable as the listed methods. The monthly samples shall be aggregated into a quarterly composite sample for each fuel and analyzed for total mercury using ASTM method D3684-94 (2000), incorporated by reference in s. NR 484.10(47m).

b. Liquid fossil fuel samples shall at a minimum be collected quarterly or at the time each fuel shipment is received, whichever is less frequent, for each fuel following methods listed in s. NR 439.08(2). Each sample shall be analyzed for total mercury using EPA Method 7473, incorporated by reference in s. NR 484.05 (13), or EPA method 1631, incorporated by reference in s. NR 484.05(10).

c. Fuels other than coal or liquid fossil fuels shall be sampled using methods listed in s. NR 439.08(3). The samples shall be analyzed for total mercury using EPA Method 7473, incorporated by

reference in s.NR 484.05 (13), or EPA method 1631, incorporated by reference in s. NR 484.05(10).

d. The total quarterly quantity of each fuel used shall be determined using 40 CFR part 60 Appendix B methods, incorporated by reference in s. NR 484.04(21), or by a method approved by the department.

3. The mercury mass content of each by-product shall be determined using the following sampling and analysis procedures:

a. A representative sample shall be collected monthly for each combustion by-product and aggregated into a quarterly composite sample. The monthly representative sample shall be composed of a number and placement of samples determined to yield a 95% confidence level for random sampling according to the methods of EPA SW-846, Chapter 9, incorporated by reference in s. NR 484.05(11).

b. The quarterly composite sample of each combustion by-product shall be analyzed for mercury using ASTM method D6414-99, incorporated by reference in s. NR 484.10(55m).

c. The amount of each by-product collected shall be determined each quarter using methods approved by the department.

d. If use of a different fuel is initiated, this shall constitute a new by-product stream requiring the collection of a new composite sample.

4. The owner or operator shall submit an annual report which includes the following for each mercury emissions unit:

a. The quarterly consumption, mercury concentration, and mass mercury content for each fuel; the total quarterly mass mercury content for all fuels consumed; and the total annual mass mercury content for all fuels consumed.

b. The quarterly quantity collected, mercury concentration and mass mercury content for each by-product; the total quarterly mass mercury content for all by-products; and the total annual mass mercury content for all by-products.

c. The quarterly and annual aggregate mercury mass emissions expressed in pounds.

5. The recordkeeping requirements of s. NR 439.04(1) and (2) apply to the data collected for the annual reports required under subd. 4.

(2) STATIONARY SOURCE PROCESS UNIT. Unless the department approves an alternative method under sub. (3), the owner or operator of a process unit that emits mercury and is subject to s. NR 446.03 shall use the following methods and procedures to determine and report annual mercury emissions:

(a) A mass balance shall be used to calculate the mercury contained in each applicable process stream for each quarter of operation as follows:

1. For all process streams, including process raw materials, products and process by-products, and pollution control equipment and control by-products, the mass balance shall determine the following:
 - a. The quarterly mercury concentration and throughput rate for each process stream.
 - b. The quarterly and annual mercury mass content input and output for each process stream.
2. Any needed sampling and analysis of input or output process streams for mercury content shall use EPA Method 7473, incorporated by reference in s.NR 484.05(13), or EPA method 1631, incorporated by reference in s. NR 484.05(10), or methods approved by the department.

(b) The owner or operator shall submit an annual report which includes the following for each applicable process stream:

1. All quarterly and annual mercury content data determined under par. (a).
2. The quarterly and annual aggregate mercury mass emissions expressed in pounds.

(c) The recordkeeping requirements of s. NR 439.04(1) and (2) apply to the data collected for the annual reports required under par. (b).

(3) ALTERNATIVE EMISSION MONITORING. (a) The owner or operator of a mercury emissions unit may request that the department approve the use of an alternative monitoring method and procedure to determine annual mercury emissions for a mercury emissions unit, in place of those specified in sub. (1) or (2).

(b) The use of alternative monitoring methods shall require a biennial emissions performance test of mercury emissions and all parameters used in the alternative monitoring method to determine mercury emissions according to the following:

1. The performance test shall be conducted according to methods and procedures specified under

ss. NR 439.07 and 446.15 for emission testing.

2. Exhaust gas mercury emissions, temperature, flowrate and fuel consumption shall be determined using methods specified under s. NR 439.07 for compliance emission testing.

3. Fuel characteristics and mercury concentrations shall be determined according to methods specified under sub. (1) and s. NR 446.04(1) and (2).

4. All by-products shall be identified and mercury concentrations determined according to methods specified under sub. (1) and s. NR 446.04(1) and (2).

5. All process streams shall be identified and mercury concentrations determined according to methods specified under sub. (2) and s. NR 446.04(3).

(c) The alternative monitoring method shall establish a 95% confidence level for determining mercury emissions.

(d) If, following an emissions performance test, a mercury emissions unit undergoes a change in operation not accounted for in the test results reported under par. (b), the owner or operator shall notify the department of the change.

(e) Upon receipt of a notification under par. (d), the department may require the owner or operator to conduct an additional performance test.

NR 446.12 Variance for major utilities. (1) The owner or operator of a major utility may request a variance from the baseline mercury emission requirement of s. NR 446.03 or the emissions reduction requirements of s. NR 446.06 by submitting a written request to the department and the commission. The request shall provide sufficient information concerning the conditions or special circumstances on which the variance request is based to demonstrate to the department's satisfaction that a variance from the applicable requirements is necessary. In addition, the request shall include the following:

(a) Where an alternative compliance schedule is sought, the owner or operator shall submit a proposed schedule which demonstrates reasonable further progress and contains a date for final compliance as soon as practicable.

(b) Where an alternative reduction requirement is sought, the owner or operator shall submit a proposed reduction requirement.

(c) Requests for variances shall contain relevant information on the costs and technological feasibility of meeting the reduction requirements as required by the department.

(2) The department may grant a variance that sets an alternative reduction requirement or schedule, or both.

(3) The department may grant a variance if, in consultation with the commission, the department determines that one of the following conditions preclude the major utility from meeting the baseline mercury emission requirement or an emission reduction requirement:

(a) A major electrical supply emergency within or outside this state that affects the major utility.

(b) A major fuel supply disruption that affects the major utility.

(c) An unanticipated disruption in the operation of a fossil fuel fired unit at the major utility.

(d) The occurrence of an uncontrollable event not anticipated in the compliance plan required under s. NR 446.10(1)(f).

(4) The department may grant a variance if the owner or operator demonstrates to the department's satisfaction that the reduction requirements in s. NR 446.06 are technologically or economically infeasible.

(5) The department may grant a variance that sets an alternative schedule if the owner or operator demonstrates to the department's satisfaction that the delay is needed to complete installation and place into operation control technology to achieve compliance with a reduction requirement in s. NR 446.06.

(6) Within 90 days of the filing of a completed request, the department shall publish a public notice on each variance request and the department's preliminary determination to grant or deny the request, to provide the opportunity for public comments including, where requested, a public hearing on the variance request. Following the public comment period, the department shall notify the variance applicant in writing of the reasons for denying, granting or for granting in a modified form any request for a variance.

(7) The department may, after notice and opportunity for hearing, revoke or modify any variance when any term or condition of the variance has been violated.

NR 446.13 Rule evaluation reports. (1) The department staff shall report to the natural resources board on at least an 18-month basis on scientific and technological developments which occur that affect the ability to control or reduce mercury emissions. The report shall include:

- (a) An evaluation of the scientific and technology developments.
- (b) An evaluation of whether the requirements of s. NR 446.06(3) are achievable, given scientific and technological developments.
- (c) Recommendations for revisions to this subchapter or other actions based on the developments.

(2) The natural resources board shall review the report and, if the report includes recommendations for rule revisions or other actions, determine whether the department should proceed with actions based on the recommendations.

SECTION 17. NR 446 Subchapter III (title) preceding s. NR 446.14 is created to read:

NR 446 (title) **Subchapter III - Emission Standards for Mercury.**

SECTION 18. NR 446.14 (title) and (intro.) are created to read:

NR 446.14 (title) **Mercury emission limits.** (intro.) No person may cause, allow or permit emissions of mercury:

SECTION 19. NR 484.04(21) is amended to read:

NR 484.04 (21) 40 CFR part 60
Appendix B

Performance Specifications

NR 428
NR 439
NR 446.11(1)(a)2.d.
NR 446.11(1)(b)2.d.
NR 460 to 469

SECTION 20. NR 484.05(9) is amended to read:

NR 484.05 (9)	EPA-450/3-84-014, December 1984	Review of National Emission Standards for Mercury	NR 446.04 <u>446.15</u> (3)(d)Note
---------------	---------------------------------	---	---

SECTION 21. NR 484.05(10) to (13) are created to read:

Document Reference	Document Title	Incorporated by Reference For
NR 484.05 (10) EPA-821/R-96-001, Method 1631	Mercury in Water / Oxidation Purge & Trap CVAFS	NR 446.04(1)(b)4.c. NR 446.04(3)(b) NR 446.11(1)(a)2.b. NR 446.11(1)(a)2.c. NR 446.11(1)(b)2.b. NR 446.11(1)(b)2.c. NR 446.11(2)(a)2.
(11) SW-846, Chapter 9, September 1986	Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Third Edition – Sampling Plan	NR 446.04(1)(c)1.b. NR 446.11(1)(a)3.a. NR 446.11(1)(b)3.a.
(12) SW-846, Draft Update IVA, Method 7471B, January 1998	Mercury in Solid or Semisolid Waste (Manual-Cold Vapor Technique)	NR 446.04(1)(b)4.c. NR 446.04(3)(b)
(13) SW-846, Draft Update IVA, Method 7473, January 1998	Mercury in Solids and Solutions by Thermal Decomposition, Amalgamation, and Atomic Absorption Spectrophotometry	NR 446.04(1)(b)4.c. NR 446.04(3)(b) NR 446.11(1)(a)2.b. NR 446.11(1)(a)2.c. NR 446.11(1)(b)2.b. NR 446.11(1)(b)2.c. NR 446.11(2)(a)2.

SECTION 22. NR 484.10(47m), (52m) and (55m) are created to read:

Standard Number	Standard Title	Incorporated by Reference For
NR 484.10 (47m) ASTM D3684-94 (2000)	Standard Test Method for Total Mercury in Coal by Oxygen Bomb Combustion/Atomic Absorption Method	NR 446.04(1)(b)4.b. NR 446.11(1)(a)2.a. NR 446.11(1)(b)2.a.
(52m) ASTM D4208-88 (1997)	Standard Test Method for Total Chlorine in Coal by Oxygen Bomb Combustion/Ion Selective Electrode Method	NR 446.04(1)(b)4.b. NR 446.04(1)(b)4.c.
(55m) ASTM D6414-99	Standard Test Method for Total Mercury in Coal and Coal Combustion Residues by	NR 446.04(1)(c)1.b. NR 446.11(1)(a)3.b.

Acid Extraction or Wet Oxidation/Cold
Vapor Atomic Absorption

NR 446.11(1)(b)3.b.

The foregoing rule was approved and adopted by the State of Wisconsin Natural Resources Board
on _____.

The rules shall take effect on the first day of the month following publication in the Wisconsin
administrative register as provided in s. 227.22(2)(intro.), Stats.

Dated at Madison, Wisconsin _____

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

By _____
Darrell Bazzell, Secretary

(SEAL)